



Contents of *Aquaculture*, Volume 127

VOL. 127 NO. 1

15 OCTOBER 1994

Diseases, Parasites and Predators

- Studies on the chemical control of a *Vibrio campbellii*-like bacterium affecting hatchery-reared *Penaeus indicus* larvae
A.S.S. Hameed and P.V. Rao (Cochin, India) 1

Genetics and Breeding

- Assessment of triploid common carp (*Cyprinus carpio* L.) for culture
N.B. Cherfas, B. Gomelsky, N. Ben-Dom, Y. Peretz and G. Hulata (Dor, Mobile Post Hof Hacarmel, Israel) 11

Nutrition

- Attraction and palatability activities in juvenile abalone (*Haliotis fulgens*): nine ingredients used in artificial diets
M.T. Viana, M. Cervantes-Trujano and R. Solana-Sansores (Ensenada, BC, Mexico) 19
- Essential fatty acid requirement of the Chinese prawn, *Penaeus chinensis*
X.L. Xu (Fort Pierce, FL, USA), W.J. Ji (Qingdao, China), J.D. Castell and R.K. O'Dor (Halifax, NS, Canada) 29
- Nutrient digestibility and growth of hybrid tilapia, *Oreochromis niloticus* × *O. aureus*, as influenced by agar supplementation at two dietary protein levels
S.-Y. Shiau and H.-S. Liang (Keelung, Taiwan ROC) 41
- Pathological effects of feeding young *Oreochromis niloticus* diets supplemented with different levels of aflatoxin B₁
Ma.C. Chávez-Sánchez, C.A. Martínez Palacios and I. Osorio Moreno (Mazatlán, Sinaloa, Mexico) 49
- The optimum carbohydrate to lipid ratio in hybrid *Clarias* catfish (*Clarias macrocephalus* × *C. gariepinus*) diets containing raw broken rice
W. Jantrarat, P. Sitasit and S. Rajchapakdee (Bangkok, Thailand) 61

Physiology and Endocrinology

- Behavioral and physiological changes in yearling chinook salmon during hatchery residence and downstream migration
W.D. Muir, A.E. Giorgi and T.C. Coley (Seattle, WA, USA) 69
- Detection of 4-quinolone residues in rainbow trout (*Oncorhynchus mykiss* Walbaum) muscle using a bio-assay
G.A. Barker (Weymouth, Dorset, UK) 83

VOL. 127 NOS. 2/3

1 NOVEMBER 1994

Economics and Marketing

The economics of broiler, grain, and trout production as a risk diversification strategy

- J.R. Bacon, C.M. Gempesaw II, I. Supitaningsih (Newark, DE, USA) and J. Hankins
(Shepherdstown, WV, USA) 91

Genetics and Breeding

Genetic variation in antibody response to diphtheria toxoid in Atlantic salmon and rainbow trout

- D.M. Eide, R.D. Linder, A. Strømsheim (Oslo, Norway), K. Fjalestad (aoAs-NLH, Norway),
H.J.S. Larsen and K.H. Røed (Oslo, Norway) 103

Genetic testing of common carp in cages. 3. Comparison of the effect of grading and multiple nursing on growth

- G.W. Wohlfarth and R. Moav (Dor, D.N. Hof Hacarmel, Israel) 115

Mitochondrial DNA variation and markers of species identity in two penaeid shrimp species: *Penaeus monodon* Fabricius and *P. japonicus* Bate

- D. Bouchon, C. Souty-Grosset and R. Raimond (Poitiers, France) 131

Genetic differences among black-lipped pearl oyster (*Pinctada margaritifera*) populations in the western Pacific

- J.A.H. Benzie and E. Ballment (Townsville, M.C. Qld., Australia) 145

Husbandry and ManagementChemical and physical differences in milkfish (*Chanos chanos*) eggs from natural and hormonally induced spawns

- H. Ako, C.S. Tamaru and C.-S. Lee (Honolulu, HI, USA) 157

NutritionEvaluation of soybean meal, spirulina meal and chicken offal meal as protein sources for silver seabream (*Rhabdosargus sarba*) fingerlings

- A.-F.M. El-Sayed (Doha, Qatar) 169

Effect of different levels of *n*-3 highly unsaturated fatty acids on growth and fatty acid composition of juvenile gilthead seabream (*Sparus aurata*)

- C. Ibeas (La Laguna, Tenerife, Canary Islands, Spain), M.S. Izquierdo (Las Palmas de Gran Canaria, Gran Canaria, Canary Islands, Spain) and A. Lorenzo (La Laguna, Tenerife, Canary Islands, Spain) 177

Effects of dietary animal and plant protein ratios and energy levels on growth and body composition of bream (*Megalobrama skolkovii* Dybowski) fingerlings

- S. Haiqing and H. Xiqin (Wuhan, Hubei, People's Republic of China) 189

The effect of dietary protein level and source on growth, body composition, total ammonia and reactive phosphate excretion of growing sea bass (*Dicentrarchus labrax*)

- R. Ballestrazzi, D. Lanari, E. D'Agaro and A. Mion (Pagnacco, Udine, Italy) 197

Arginine requirement and effect of different dietary arginine and lysine levels for fingerling sea bass (*Dicentrarchus labrax*)

- E. Tibaldi, F. Tulli and D. Lanari (Pagnacco UD, Italy) 207

Gastric abnormalities in rainbow trout (*Oncorhynchus mykiss*) fed amine-supplemented diets or chicken gizzard-erosion-positive fish meal

- W.T. Fairgrieve, M.S. Myers, R.W. Hardy and F.M. Dong (Seattle, WA, USA) 219

Influence of vitamin C on the folate requirement of channel catfish, *Ictalurus punctatus*, for growth, hematopoiesis, and resistance to *Edwardsiella ictaluri* infection

- P.L. Duncan and R.T. Lovell (Auburn, AL, USA) 233

Estimation of apparent phosphorus availability from inorganic phosphorus sources for *Penaeus vannamei*

- D.A. Davis and C.R. Arnold (Port Aransas, TX, USA) 245

Potential use of liposomes in larviculture as a delivery system through <i>Artemia</i> nauplii F. Hontoria (Ribera de Cabanes, Castellón, Spain), J.H. Crowe, L.M. Crowe (Davis CA, USA) and F. Amat (Ribera de Cabanes, Castellón, Spain)	255
Physiology and Endocrinology	
Milt production in common carp (<i>Cyprinus carpio</i>): stimulation by a goldfish steroid pheromone N. Stacey, Zheng, W.-b. and J. Cardwell (Edmonton, Alta, Canada)	265
Letters to the Editor	
Extending limits of pond production	277
Vaccination against Ich	278
Book Review	
The mussel <i>Mytilus</i>	283

VOL. 127 NO. 4

15 NOVEMBER 1994

Diseases, Parasites and Predators

Parasite loads of rafted blue mussels (<i>Mytilus galloprovincialis</i>) in Spain with special reference to the copepod, <i>Mytilicola intestinalis</i> J.A.F. Robledo, M.M. Santarém and A. Figueras (Vigo Pontevedra, Spain)	287
--	-----

Economics and Marketing

Using consumer profiles to increase the U.S. market for seafood: implications for aquaculture G.D. Hanson, G.P. Rauniyar and R.O. Herrmann (University Park, PA, USA)	303
--	-----

Husbandry and Management

Vertical activity of four salmonid species in response to changes between darkness and two intensities of light O.I. Mork and J. Gulbrandsen (Sunndalsøra, Norway)	317
Growth and diet of cultivated black-footed abalone, <i>Haliotis iris</i> (Martyn) M.D. Stuart (Dunedin, New Zealand) and M.T. Brown (Plymouth, UK)	329

Physiology and Endocrinology

Relationships between oxygen availability and metabolic cost of breathing in Nile tilapia (<i>Oreochromis niloticus</i>): aquacultural consequences M.N. Fernandes and F.T. Rantin (São Carlos, SP, Brazil)	339
Physiological responses of the common clownfish, <i>Amphiprion ocellaris</i> (Cuvier), to factors related to packaging and long-distance transport by air P.S. Chow, T.W. Chen and L.H. Teo (Kent Ridge, Singapore)	347
Influence of dietary protein intake and recombinant human somatotropin administration on growth and body composition of juvenile tambacu (a <i>Piaractus mesopotamicus</i> × <i>Colossoma macropomum</i> cross) M. Macari, D.J. Carneiro (Jaboticabal, SP, Brazil), M.L. Larson (Ribeirão Preto, SP, Brazil) and C.R. Machado (Jaboticabal, SP, Brazil)	363

Technical Paper

Statistical power and aquacultural research

R. Searcy-Bernal (Ensenada, B.C., Mexico) 371

Author Index 389**Contents of *Aquaculture*, Volume 127** 393